REMARKS

By this amendment claims 1-11 have been cancelled. Claims 12-15 have been added. No new subject matter has been added. Claims 12-15 are pending in the application.

The object of the present invention is to provide a method for operating a compression ignition engine which is characterized by low emissions and high engine efficiency. This object is solved by providing the method of operating a compression ignition engine according to claim 12 in which an oxygenated diesel fuel composition comprising methanol, dimethyl ether (DME) and water is used. The method comprises the steps of injecting the fuel into the combustion chamber of the engine and combusting the fuel with air. The air for combustion is preheated to a temperature of at least 60ºC. This feature results in advantages which are neither suggested nor rendered obvious by the cited prior art.

The essential feature of the present invention is the specific inlet temperature of the engine intake air, which is demonstrated in all examples of the present application. As, for example, shown in Example 4 on page 18 and 19, the air inlet temperature controls the operation of the engine with the claimed diesel fuel composition, so that at an inlet temperature below 60ºC, the engine stops when operating on methanol/DME/water fuel. Furthermore, emission characteristics are improved at higher inlet temperatures, whereas the combustion efficiency is favored at lower inlet temperature (see page 20, lines 22 to 26 of the specification).

Claims 7, 8, and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Norton (U.S. Patent No. 4,422,412).

Norton describes a modification to a compression ignition engine by adapting a device which converts a minor portion (preferably less than half) of a methanol feed to dimethyl ether (corresponding to the lower half part of Line A in Figure 1 of the present application). Thus, Norton does not concern methanol/dimethyl ether/water compositions with less than 50 wt% of methanol, and further does not discuss the need for combustion air preheat. In other words, since an exclusively pure ethanol is mentioned as feedstock, only fuel compositions with less than 14 wt% water are disclosed. New claim 12 recites, *inter alia*, "the concentration of methanol is between 5 and 50% w/w, ... [and] a process comprising the step of converting methanol containing up to 20% w/w of water." The present invention concerns the use of diesel fuel compositions with more than 14 wt% of water. In fact, as described on page 5, lines 11 to 16 of the specification, the presence of water reduces the formation of nitrogen oxides. Norton is completely silent with respect to the reduction of nitrogen oxides and the need for combustion air preheat.

Claim 8-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Basu et al. (U.S. Patent No. 6,270,541).

Basu et al. discloses an engine provided with a turbocharger and an air-to-air intercooler for testing such a fuel. This reference does, however, not provide any data on the intake air temperature. New claim 12 recites, *inter alia*, "air for combustion is preheated to a temperature of at least 60°C." In diesel engines provided with a turbocharger and an air cooler, the combustion air inlet temperature depends on the pressure provided by the turbocharger, in other words, whether the turbocharger is a low, medium or high pressure charger. No technical data with respect to the pressure and temperature provided by the turbocharger and intercooler are given in Basu et al.

The cited prior art does not give any hints with respect to the influence of the engine air intake temperature on a methanol/DME/water based diesel fuel.

Therefore, the claimed subject matter is also based on an inventive step.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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